

Appl. No. : 10/629,210
Filed : July 28, 2003

REMARKS

Claims 1-3, 7-10, and 32 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. (“Peyman et al.”). Claim 1 has been amended to further clarify that which Applicants regard as their invention. Specifically, limitations of claims 9 and 10 have been incorporated into claim 1. Claims 9-10 have been canceled without prejudice. Because claims 9 and 10 were considered in the most recent Office Action mailed on June 22, 2005, Applicants respectfully assert that incorporation of claims 9 and 10 into claim 1 create no new grounds of rejection and, therefore, no new search should be necessitated. Applicants traverse these rejections for the reasons discussed below.

Claims 4-6 and 11-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Peyman et al. in view of at least one of U.S. Patent Numbers 5,366,502 (“Patel”) or 6,107,058 (“Portney”), or U.S. Patent Application Numbers 2003/0097176 (“Nordan et al.”) or 2002/004253 (“Copeland et al.”). Applicants traverse these rejections for the reasons discussed below.

Claims 31 and 33-38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Peyman et al. in view of U.S. Patent No. 4,881,805 (Cohen ‘805). Claim 39 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Peyman et al. in view of U.S. Patent No. 5,117,306 (Cohen ‘306). Applicants traverse these rejections for the reasons discussed below.

On September 12, 2005, a telephonic interview was held between the Examiner and the undersigned to discuss the merits of the case in light of the prior art of record. The undersigned thanks the Examiner for a profitable interview and clarification regarding his position. During the interview, claims 1, 9, and 10 were discussed. Final agreement was not reached between the Examiner and the undersigned.

Claims 1-3, 7-8 and 32 Are Not Anticipated by U.S. Patent No. 6,197,057 (“Peyman et al.”).

Peyman et al. teaches a supplemental intraocular lens to modify the lens system of an eye comprising the cornea and the natural lens or an intraocular lens already implanted in the eye. In one embodiment, the supplemental intraocular lens has substantially no refractive power except for a high minus lens portion at its center. When a spectacle lens is placed in front of the cornea, the spectacle lens, cornea, natural or intraocular lens and supplemental intraocular lens provide the eye with magnified and restricted peripheral vision. Peyman et al., Abstract.

Appl. No. : 10/629,210
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In another embodiment, Peyman teaches a supplemental intraocular lens 166 that has no or substantially no refractive power. Peyman et al., column 8, line 67 – column 9, line 1. As illustrated in Figure 25 of Peyman et al., the supplemental intraocular lens 166 acts in conjunction with the cornea 102 and natural lens 106 to create a prismatic lens system which focuses light rays 114 onto a portion of the retina 110 away from the macula 112. Peyman et al., column 9, lines 21-25. The supplemental intraocular lens 166 does not provide any refractive power, but diffracts light rays in the manner just described. Peyman et al., column 9, lines 9-11.

By contrast, claim 1, as amended, is directed to an intraocular lens comprising, among other things, a supplemental intraocular lens to modify vision correction provided by the primary intraocular lens...comprising a substantially completely diffractive optic, the supplemental lens having a positive optical power or a negative optical power. Peyman does not teach these elements. For example, in the embodiment cited by the Examiner, Peyman et al. does not teach or suggest supplemental lens having a positive optical power or a negative optical power. To the contrary, Peyman et al. teaches a prism or other shape which does not provide any refractive power (e.g., Peyman et al., column 9, lines 9-11). The prism or other shape acts in conjunction with the cornea and the natural lens (which would have optical power) to focus light rays onto a portion of the retina away from the macula (Peyman et al., column 9, lines 20-24). The prism or other shape does not provide any refractive power. Rather, it is the cornea and the natural lens (or an artificial lens) that provide the refractive power to focus light onto the retina (e.g., Figures 1 and 17).

Furthermore, in the embodiment cited by the Examiner, Peyman et al. does not teach or suggest an optic to modify vision correction provided by a primary intraocular lens. To the contrary, Peyman et al. teaches a prism or other shape which does not provide any refractive power (or diffractive power). Peyman et al., column 8, line 67 to column 9, line 1, and column 9, lines 9-11. The prisms or other shapes taught by Peyman et al. act in conjunction with the cornea 102 and natural lens 106 (or an artificial lens) to create a prismatic lens system which focuses light rays 114 onto a portion of the retina 110 away from the macula 112. Peyman et al., Figure 25 and column 9, lines 21-25; Peyman et al., column 2, lines 60-61. Therefore, Peyman et al. does not teach an optic to modify vision correction provided by a primary intraocular lens, but instead teaches an optic to translate the focus away from the macula.

At least because Peyman et al. does not teach or suggest all of the limitations of claim 1, Applicants request the Examiner to indicate that claim 1 is allowable. Claims 2-3, 7-8 and 32

Appl. No. : 10/629,210
Filed : July 28, 2003

depend from claim 1 and further define the invention of claim 1. Thus, claims 2-3, 7-8 and 32 are patentable over Peyman et al. at least for the same reasons that claim 1 is patentable thereover, and are patentable in their own right as well.

Claims 4-6, 11-14, 33-37 Are Patentable Over Peyman et al., Patel, Portney, Nordan et al., Copeland et al., and Cohen '805

Patel, Portney, Nordan et al., Copeland et al., Cohen '805, and Cohen '306 have been used in combination with Peyman et al. to reject claims 4-6, 11-14, and 33-37. Claim 1, from which claims 4-6, 11-14, and 33-37 are dependent, has been amended to more clearly claim certain aspects of Applicants' invention. Applicants assert that amended claim 1 is patentable over Peyman et al. for the reasons discussed above. The examiner has not produced a prima facie case that amended claim 1 obvious over Peyman et al. in light of any of the other cited references. Accordingly, Applicants further assert that claim 1 is patentable all these references. Claims 4-6, 11-14, 33-37 depend from claim 1 and further define the invention of claim 1. Thus, claims 4-6, 11-14, 33-37 are patentable over Peyman et al., Patel, Portney, Nordan et al., Copeland et al., and Cohen '805 at least for the same reasons that claim 1 is patentable thereover, and are patentable in their own right as well.

Claims 38 Is Patentable Over Peyman et al. and Cohen '805

The teachings of Peyman et al. are discussed above. Cohen '805 teaches a contact lens (or intraocular lens) which possesses phase plate optics within its optic zone that progressively shift the intensity of light focussed by bifocal phase plates between the diffractive focal powers by utilizing echelettes in the phase plates of varying depths and heights which are cooperatively aligned relative to the lens base curve surface that they opening face. Cohen '805, column 3, lines 24-31.

By contrast, claims 38 is directed to intraocular lenses comprising, among other things, a diffractive lens configured for placement in the eye of the patient having a plurality of echelettes, the diffractive lens being positively powered. To establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. In addition, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be

Appl. No. : 10/629,210
Filed : July 28, 2003

found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). MPEP 2143.

Applicants assert that one of ordinary skill in the art would not have a motivation to combine Peyman et al. with Cohen '805. Peyman et al. is directed to an intraocular lens having two embodiments: (1) a substantially non-refractive configuration with a high minus portion at its center, or (2) a substantially non-refractive prismatic or other diffractive configuration. Peyman et al., column 1, lines 11-15. As used by Peyman et al., the terms "non-refractive" and "no refractive power" indicate an optical element or portion thereof that, of itself, does not form a real or virtual focus and, thus, is neither positively nor negatively powered. See, for example, Peyman et al., column 3, lines 34-35; column 6, line 65 to column 7, line 4; column 7, lines 15-18.

In the case of the first embodiment, Peyman et al. does not teach or suggest a diffractive supplemental intraocular lens, but rather a bi-concave or plano-concave supplemental intraocular lens 116 having substantially planar surfaces and recessed portions 118 and 120 therein, which are each circular or substantially circular in shape. The recessed portions 118 and 120 act as a minus lens having a power ranging between -30 diopters to about -120 diopters. Peyman et al., column 6, lines 5-17. Therefore, Peyman et al. teaches a supplemental intraocular lens that is negatively powered (e.g., having a power ranging between -30 diopters to about -120 diopters). By contrast, Applicants' claim 38 is limited to a diffractive lens that is positively powered. Therefore, one of skill in the art would not have an incentive to combine Cohen '805 to Peyman et al. at least because Peyman et al. teaches away from the embodiment of Applicants' invention recited in claim 38, since Peyman et al. requires a lens that is negatively powered.

In the case of the second embodiment, Peyman et al. teaches numerous times within the specification a supplemental optical element that does not provide any refractive power (e.g., Peyman et al., column 9, lines 9-11). In other words, Peyman teaches an optical element that has no focal power. By contrast, Cohen teaches an optical element that provides two diffractive focal powers. Therefore, one of skill in the art would not have an incentive to combine Cohen '805 to the second embodiment of Peyman et al., since Cohen '805 teaches away from Peyman et al., which requires an optical element having no focal power. In addition, one of skill in the art would have no expectation of success by combining the teachings of Cohen '805 with those of Peyman et al., since the diffractive focal power of Cohen's would unfavorably alter the longitudinal location of the focal point on the retina (e.g., the focal point illustrated by the converging rays shown in Figure 25 of

Appl. No. : 10/629,210
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Peyman et al. would be displaced longitudinally by the addition of an optical element according to Cohen '805).

Furthermore, in the case of the second embodiment, Peyman et al. teaches a supplemental optical element that is prismatic and capable of focusing light away from the macula, as illustrated in Figure 25 (see Peyman et al., column 1, lines 14-15 and column 9, lines 22-24). Thus, Peyman et al. solves the problem of moving focused light away from the macula and onto an undiseased area of the retina (Peyman et al., column 1, lines 60-64). However, Cohen '805 does not teach or suggest an optical element that is prismatic. Therefore, one of skill in the art would have no incentive to combine the teachings of Cohen '805 to those of Peyman et al., since the teachings of Cohen '805 do not aid in solving the problem addressed by Peyman et al. through the use of a prism or similar element.

At least because there is no incentive to one of ordinary skill in the art to combine the teachings of Cohen '805 with those of Peyman et al. and because there is no reasonable expectation of success, Applicants request the Examiner to indicate that claim 38 is allowable.

Claim 39 Is Patentable Over Peyman et al. and Cohen '306

The teachings of Peyman et al. are discussed above. Cohen '306 teaches a diffraction bifocal lens comprising two profiled surfaces, wherein one profile provides for the bifocality of the lens and the other profile compensates for chromatic aberration. These lenses or lens systems exhibit two focal points, one which exhibits positive chromatic aberration and the other which exhibits negative chromatic aberration. Cohen '306, Abstract. Each of the two focal points corresponds to two diffractive powers of the diffractive bifocal lens.

By contrast, claim 39 is directed to intraocular lenses comprising, among other things, a diffractive lens configured for placement in the eye of the patient having a plurality of echelettes, the diffractive lens being negatively powered.

The Examiner has asserted that it would have been obvious to make the negative lens portion of the Peyman device with a negative powered diffractive lens of echelettes. Applicants traverse this assertion. The embodiment of Peyman cited by the Examiner comprises a supplemental intraocular lens 116 that provides a high minus lens. Peyman et al., column 6, lines 65-66. One of skill in the art would not have a motivation to combine the teachings of Cohen to those of Peyman et al., since Cohen does not teach or suggest a high minus lens. Rather, Cohen

Appl. No. : 10/629,210
Filed : July 28, 2003

teaches an optical lens or lens system with two diffractive surfaces or interfaces or linear combinations thereof. Cohen, column 3, lines 6-8. The two optical surfaces (diffractive lenses) are combined according to a specific formula and produce two focal points. Cohen, column 2, lines 51-53 and Abstract. Thus, the combination taught by Cohen does not produce a negative lens, much less the high minus lens required by Peyman et al.

Furthermore, for the embodiment cited by the Examiner, Peyman et al. does not teach or suggest the use or even the desirability of either a diffractive lens or a bifocal lens exhibiting a first focal point with positive chromatic aberrations and a second focal point with negative chromatic aberrations. Both these features are essential in the diffraction bifocal lens taught by Cohen and are used to solve a problem completely different from that being solved by Peyman et al. There is no suggestion in Peyman et al. that these features of the Cohen lens would offer any advantage when applied to the Galilean telescope taught by Peyman et al. that is formed by the combination of the high minus lens 116 and the spectacle lens 122 (Peyman et al., column 6, lines 57-64). Thus, one of skill in the art would have not have any incentive to combine the teachings of Cohen with those of Peyman et al.

At least because there is no incentive to one of ordinary skill in the art to combine the teachings of Cohen '306 with those of Peyman et al., Applicants request the Examiner to indicate that claim 39 is allowable.

Appl. No. : 10/629,210
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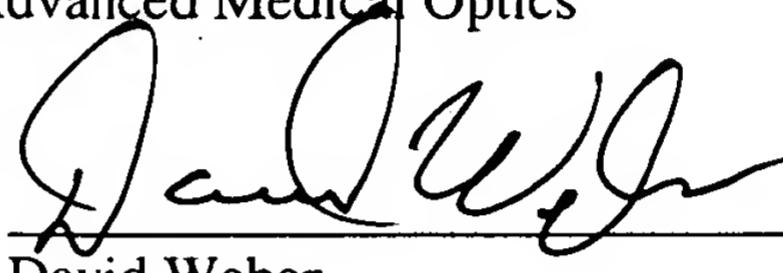
CONCLUSION

For the foregoing reasons, Applicants respectfully assert that the claims now pending are allowable over the prior art of record. Therefore, Applicants earnestly seek a notice of allowance and prompt issuance of this application.

The Commissioner is hereby authorized to charge payment of any fees associated with this communication to Deposit Account No. 502317.

Respectfully submitted,
Advanced Medical Optics

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By: 

David Weber
Registration No. 51,149
Agent of Record
Customer No. 33357
(714) 247-8232